

The invention in which an exclusive right is claimed is defined by the following:

I. A method for imaging and decoding a plurality of encoded beads comprising the steps of:

- (a) collecting light from an encoded bead along a collection path;
- (b) dispersing the light that is traveling along the collection path into a plurality of light beams, as a function of a plurality of different discriminable characteristics of the light;
- (c) focussing each of the plurality of light beams to produce a respective image corresponding to that light beam, thereby generating a plurality of images, each image being indicative of an identity of said encoded bead;
- (d) detecting the plurality of images;
- (e) analyzing the images to determine the identity of said encoded bead; and
- (f) repeating steps (a)-(e) for successive encoded beads from the plurality of encoded beads.